Listing of the Claims:

1. (currently amended) A motion estimation unit ~~(500)~~ for estimating a current motion vector for a group of pixels of an image, comprising:

a generating unit ~~means (502)~~ for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;

a match error unit ~~(506)~~ for calculating match errors of respective candidate motion vectors; and

a selector ~~(508)~~ for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit ~~(500)~~ is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors

wherein the motion estimation unit calculates the further candidate motion vector on basis of the first motion vector and the second motion vector, with the first motion vector belonging to a first forward motion vector field and the second motion vector belonging to a second forward motion vector field, with the first forward motion vector field and the second forward motion vector field being different; and

wherein the motion estimation unit arranges to calculate the further candidate motion vector by means of calculating a difference between the second motion vector and the first motion vector.

2. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 1, characterized in that the selector ~~(508)~~ is arranged to select, from the set of candidate motion vectors, a particular motion vector as the current motion vector, if the corresponding match error is the smallest of the match errors.

3. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 1, characterized in that the match error unit ~~(506)~~ is designed to calculate a first one of the

match errors by means of subtracting luminance values of pixels of blocks of pixels of respective images of a first image pair.

4. canceled.

5. canceled

6. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 4, characterized in being arranged to calculate the further candidate motion vector by means of subtraction of the first motion vector ~~(V(0,3))~~ from the second motion vector ~~(V(0,2))~~.

7. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 1, characterized in being arranged to calculate the further candidate motion vector on basis of the first motion vector ~~(V(0,1))~~ and the second motion vector ~~(V(0,2))~~, with the second motion vector ~~(V(0,2))~~ belonging to the second forward motion vector field and the first motion vector ~~(V(0,1))~~ belonging to a third forward motion vector field, with the second forward motion vector field and the third forward motion vector field being different.

8. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 7, characterized in being arranged to calculate the further candidate motion vector by means of multiplication of the second motion vector ~~(V(0,2))~~ with a predetermined constant and subtraction of the first motion vector ~~(V(0,1))~~.

9. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 1, characterized in being arranged to calculate the further candidate motion vector on basis of the first motion vector ~~(V(3,4))~~ and the second motion vector ~~(V(3,2))~~, with the first motion vector ~~(V(3,4))~~ belonging to a fourth forward motion vector field and the second motion vector ~~(V(3,2))~~ belonging to a first backward motion vector field.

10. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 9, characterized in being arranged to calculate the further candidate motion vector by means of multiplication of the first motion vector ~~(V(3,4))~~ with a predetermined constant and summation of the second motion vector ~~(V(3,2))~~.

11. (currently amended) A motion estimation unit ~~(500)~~ as claimed in claim 1, characterized in being arranged to calculate the further candidate motion vector ~~(410)~~ on basis of the first motion vector ~~(404)~~ and the second motion vector ~~(408)~~, with the first motion vector ~~(404)~~ and the second motion vector ~~(408)~~ belonging to a particular motion vector field ~~(400)~~.

12. canceled

13. canceled

14. canceled.

15. (previously presented) The motion estimation unit of claim 1, wherein the further candidate motion vector belongs to a first subgroup of pictures in a group of pictures, wherein the first and second motion vectors belong to a second subgroup of pictures in the group of pictures, and wherein the first and second subgroups of pictures correspond to different instances in time.

16. (previously presented) The motion estimation unit of claim 15, wherein the further candidate motion vector is a forward motion vector that is used for prediction of a first picture of a *k* th subgroup of pictures, the first motion vector is a forward motion vector that is used for prediction of a *z* th picture of a *k-1* th subgroup of pictures and the second motion vector is a forward motion vector that is used for prediction of a *z-1* th picture of the *k-1* th subgroup of pictures, and wherein the further candidate motion vector and the first and second motion vectors satisfy:

$$\tilde{f}_1^k = f_z^{k-1} - f_{z-1}^{k-1},$$

where $\tilde{f}_1^k$ represents the further candidate motion vector, f_z^{k-1} represents the first motion vector and f_{z-1}^{k-1} represents the second motion vector.

17. (previously presented) The motion estimation unit of claim 1, wherein the further candidate motion vector and the first motion vector belong to a first subgroup of pictures in a group of pictures, wherein the second motion vector belongs to a second subgroup of pictures in the group of pictures, and wherein the first and second subgroups of pictures correspond to different instances in time.

18. (previously presented) The motion estimation unit of claim 1, wherein the further candidate motion vector and the first and second motion vectors belong to the same subgroup of pictures in a group of pictures, and wherein different subgroups of pictures correspond to different instances in time.

19. (previously presented) The motion estimation unit of claim 18, wherein the further candidate motion vector is a forward motion vector that is used for prediction of an *i* th picture of a *k* th subgroup of pictures, the first motion vector is a forward motion vector that is used for prediction of an *i-1* th picture of the *k* th subgroup of pictures and the second motion vector is a forward motion vector that is used for prediction of an *i-2* th picture of the *k* th subgroup of pictures, and wherein the further candidate motion vector and the first and second motion vectors satisfy:

$$\tilde{f}_i^k = f_{i-1}^k - f_{i-2}^k,$$

where $\tilde{f}_i^k$ represents the further candidate motion vector, f_{i-1}^k represents the first motion vector and f_{i-2}^k represents the second motion vector.

20. (previously presented) The motion estimation unit of claim 1, wherein the set of previously estimated motion vectors belong to the same motion vector field that is related to a zoom.

21. (new) A motion estimation unit for estimating a current motion vector for a group of pixels of an image, comprising:

a generating unit for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;

a match error unit for calculating match errors of respective candidate motion vectors; and

a selector for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors;

wherein the motion estimation unit arranges to calculate the further candidate motion vector on basis of the first motion vector and the second motion vector, with the first motion vector belonging to a fourth forward motion vector field and the second motion vector belonging to a first backward motion vector field; and

wherein the motion estimation unit arranges to calculate the further candidate motion vector by means of multiplication of the first motion vector with a predetermined constant and summation of the second motion vector.

22. (new) A motion estimation unit for estimating a current motion vector for a group of pixels of an image, comprising:

a generating unit for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;

a match error unit for calculating match errors of respective candidate motion vectors; and

a selector for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors;

wherein the further candidate motion vector belongs to a first subgroup of pictures in a group of pictures, wherein the first and second motion vectors belong to a second subgroup of pictures in the group of pictures, and wherein the first and second subgroups of pictures correspond to different instances in time; and

wherein the further candidate motion vector is a forward motion vector that is used for prediction of a first picture of a *k* th subgroup of pictures, the first motion vector is a forward motion vector that is used for prediction of a *z* th picture of a *k-1* th subgroup of pictures and the second motion vector is a forward motion vector that is used for prediction of a *z-1* th picture of the *k-1* th subgroup of pictures, and wherein the further candidate motion vector and the first and second motion vectors satisfy:

$$\vec{f}_1^{\,k} = f_z^{k-1} - f_{z-1}^{k-1},$$

where f_1^k represents the further candidate motion vector, f_z^{k-1} represents the first motion vector and f_{z-1}^{k-1} represents the second motion vector.

23. (new) A motion estimation unit for estimating a current motion vector for a group of pixels of an image, comprising:

a generating unit for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;

a match error unit for calculating match errors of respective candidate motion vectors; and

a selector for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors;

wherein the further candidate motion vector and the first and second motion vectors belong to the same subgroup of pictures in a group of pictures, and different subgroups of pictures correspond to different instances in time; and

wherein the further candidate motion vector is a forward motion vector that is used for prediction of an *i* th picture of a *k* th subgroup of pictures, the first motion vector is a forward motion vector that is used for prediction of an *i-1* th picture of the *k* th subgroup of pictures and the second motion vector is a forward motion vector that is used for prediction of an *i-2* th picture of the *k* th subgroup of pictures, and wherein the further candidate motion vector and the first and second motion vectors satisfy:

$$\tilde{f}_i^k = f_{i-1}^k - f_{i-2}^k,$$

where f_i^k represents the further candidate motion vector, f_{i-1}^k represents the first motion vector and f_{i-2}^k represents the second motion vector.